jaw. Finally, *JToplophoneus* has acquired the dentition of existing Cats.

The Machaerodons, however, show examples with a yet more reduced dentition than that of the most reduced existing Cat, viz. the Lynx, which has only two premolars in each jaw and one molar. In *Eusmilus* the molar in both jaws Is single, and there is but one premolar in the lower jaw.

The genus *MacJiaerodus* itself, which appears to include *Smilodon,* Is referred by Cope to the true Cats, and not to the Himravidae, as he terms the family which we have called here the Machaerodontidae. These creatures are known as " Sabre-toothed Tigers/* and were of very wide distribution, occurring in South America as well as in Europe and 3STorth America. " *A* a nothing," remarks Professor Cope, " but the characters of the canine teeth distinguished these from typical felines, it is to these that we must look for the cause of their failure to continue. Professor Flower's suggestion appears to be a good one, viz. that the length of these teeth became an inconvenience and a hindrance to their possessors. I think there can be no doubt that the huge canines In the Srnilodons must have prevented the biting off of flesh from large pieces, so as to greatly interfere with feeding, and to keep the animals in poor condition. The size of the canines Is such as to prevent their use as cutting instruments excepting with the rnouth closed ; for the latter could not have

been opened sufficiently to allow any object to enter it from the front. Even when it opens so far as to allow the mandible to pass behind the apices of the canines, there would appear to be some risk of the latter being caught on the point of one or the other canine, and forced to remain open, causing early starvation.

Such may have been the fate of the fine individual of the *8. neogaeits,* Lund, whose skull was found in Brazil by Lund, and which is familiar to us through the figures of de Blainville."

MacJiaerodus is placed among the Eelidae on account of the fact that the condyloid and carotid foramina unite with the foramen lacerum posterlus. But as In at least one species, J£ *jpcdmidens,* there is an alisphenoid canal, which, however, has disappeared in the more recent American forms, it seems permissible to retain the genus in the family Machaerodontidae though Its existence reduces the differential character of that ' to a minimum- The genus goes back to the Eocene.